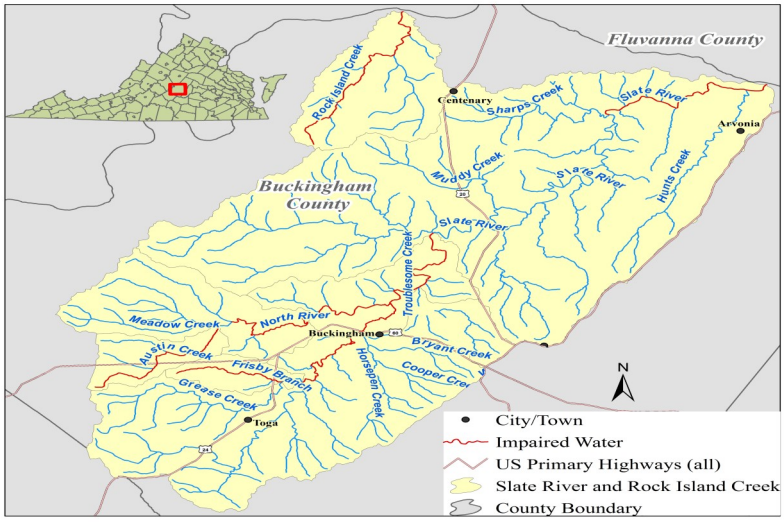
SLATE RIVER AND ROCK ISLAND CREEK WATERSHED

Project Location and Background

The Slate River and Rock Island Creek watersheds are located in the James River Basin (HUC 02080205) in Buckingham County, Virginia. The Slate River watershed is approximately 156,940 acres, and the Rock Island Creek watershed is approximately 13,050 acres. Both are primarily forested (87% and 92%, respectively), followed by pasture/cropland land uses. Located approximately 60 miles west of Richmond in the Piedmont, the Slate River and its tributaries (Frisby Branch and North River) and Rock Island Creek and its tributaries (Austin and Troublesome Creeks) were listed on *Virginia's Section 303(d) Total Maximum Daily Load (TMDL) Priority List and Report* in 2002, and 2004, respectively**,** due to violations of the state's water quality standard for fecal coliform bacteria. The TMDL study for the watersheds was completed in 2007. In 2010, the Virginia Department of Conservation and Recreation (DCR) and Peter Francisco Soil and Water Conservation District (PFSWCD) completed a TMDL implementation plan and commenced the implementation project to reduce bacteria levels in the watersheds. The implementation project also included Muddy Creek and Turpin Creek, which were listed as impaired due to excess bacteria after completion of the TMDL study.



Implementation Highlights

A 319(h)-funded TMDL implementation project that began in July 2011 and continued through 2019 has been augmented by ongoing progress supported by state funds. Table 1 shows BMPs implemented in the watersheds since the project began and overall implementation goals. Note that not all BMP goals included in the implementation plan are shown in the table due to the extensive nature of the overall BMP list.

(*continued on page 2*)

Table 1: Slate River and Rock Island Creek BMP Summary: January 2011-June 2019

Control Measure	Unit	Goal	Installed*	%
Agricultural				
Stream Exclusion Fencing	F	1,367,520	80,877	6
Stream Exclusion Fencing	S	406	32	8
Riparian Buffers	A	N/A	80	N/A
Small Grain Cover Crop	A	N/A	934	N/A
Extension of CREP Watering Systems	A	N/A	53	N/A
Reforestation of Erodible Crop	A	30	47	157
Pasture Management	A	14,198	1,489	10
Residential Septic				
Septic Tank Pump-out	S	N/A	179	N/A
Septic System Repair	S	90	5	6
Septic System Installation	S	97	23	24
Alternative Waste Treatment	S	20	4	20

A = Acres, F = Feet of stream, S = System; Note: BMP counts only include 319-funded and state VACS. NRCS EQIP funded practices are not included. *Corrections have been made to numbers of installed BMPs provided in previous annual reports.

The Virginia Nonpoint Source Management Program: The Virginia NPS Management Program is managed by the Virginia Department of Environmental Quality (DEQ) and is funded, in part, through grants from the U.S. Environmental Protection Agency, under the Clean Water Act Section 319(h). For more information regarding Virginia's Nonpoint Source Management Program, please visit us on the web at: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/NonpointSourcePollutionManagement.aspx . An electronic copy of this report can be found here: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL/TMDLImplementation/TMDLImplementationProjects.aspx General NPS Program questions? email: npsgrants@deq.virginia.gov

Implementation Highlights— Continued

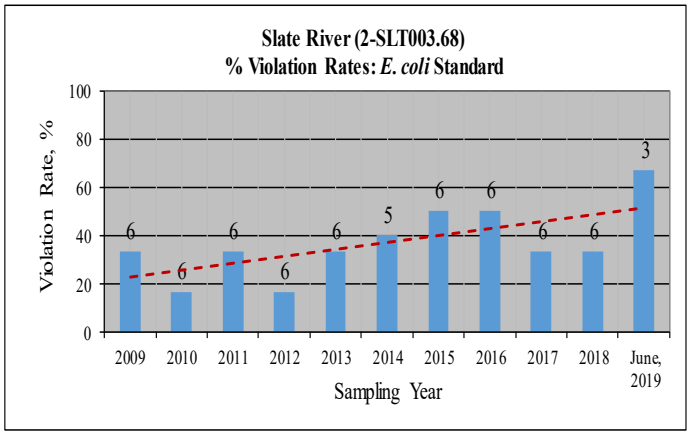
From July 2018 through June 2019, PFSWCD focused primarily on the residential septic program only and completed 53 septic projects, including 45 septic tank pump-outs, two septic system repairs, four septic system installations/ replacements, and two alternative waste treatment systems. Also, 1,420 linear feet of livestock exclusion fencing were installed. Field visits, along with postcard mailings and personal contacts and meetings with farmers and residents have been used to promote the agricultural and residential BMPs offered under the TMDL implementation project. Pollution reductions are summarized in Table 2 below.

Period	Pathogens (Coliform) (CFU)
July 2011—June 2019	7.56E+15

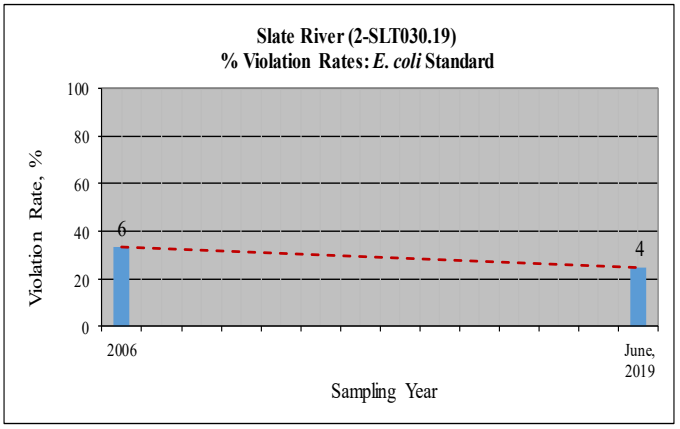
Table 2: Pollution Reductions for Slate River and Rock Island Creek Watersheds

Water Quality Monitoring Results

Water quality data collected by DEQ were analyzed to determine *E. coli* violation rates in project area for the bacteria standard of 235 cfu/100 mL and determine the impact of BMPs implemented in the project area on violation rates and associated long-term trends, if any, in water quality. The bar graphs below show the percent violation rates for samples collected at two monitoring stations: 2-SLT003.68 (for years 2009 through 2019) and 2-SLT030.19 (for years 2006 and 2019) on Slate River. The number of water quality samples collected is shown above each bar. The fitted regression line on station 2-SLT003.68 suggests an increase in violation rates, indicating possible decline in water quality. The fitted regression line on station 2-SLT030.19 indicates a decrease in violation in 2019, compared to 2006, indicating possible improvement in water quality. However, monitoring over a longer period of time with consistent trends will be needed to corroborate any change in water quality. A success story, on an 8.88-mile segment of Rock Island Creek, submitted was published last year by the EPA.



Graph 1: *E.coli* data for Slate River (Station 2-SLT003.68), 2009-2019



Graph 2: *E.coli* data for Slate River (Station 2-SLT030.19), 2006-2019

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